

REMARKS

Claims 1–14, 25, and 26 were previously pending in this application. Claims 1, 25, and 26 have been amended. No claims have been cancelled.

RESPONSE TO ARGUMENTS

In the “Response to Arguments” section of the Office Action dated March 5, 2007, the Office responds to several arguments presented by the Applicant in the Appeal Brief submitted November 29, 2006. The Applicant respectfully traverses the response to arguments as follows.

In responding to the Applicant’s argument that the system of Viroli is not specific and that the specific internal structures of Viroli cannot be extrapolated from the general discussion of the functioning of the system the Office asserts that “[c]ertainly Viroli’s teachings enable any person skilled in the art to make and use the parametric polymorphism system.” The Applicant disagrees with such an assertion for at least the following reasons.

Viroli discloses “[t]he language our translator will accept is the same as that of NextGen, it allows type operation over parametric types and type variables” and, “[s]uch a language is a strict superset of *G*” (*see* Viroli, page 6, final paragraph of section 2.3 “NextGen”). Viroli fails to disclose any implementation details at all for such a translator. Viroli’s description of the implementation of the translator is insufficient and the translator cannot be produced without undue experimentation. *See* MPEP 2121.01, “Use of Prior Art in Rejections Where Operability Is in Question [R–3] – 2100 Patentability”:

The disclosure in an assertedly anticipating reference must provide an enabling disclosure of the desired subject

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matter; mere naming or description of the subject matter is insufficient, if it cannot be produced without undue experimentation. *Elan Pharm., Inc. v. Mayo Found. For Med. Educ. & Research*, 346 F.3d 1051, 1054, 68 USPQ2d 1373, 1376 (Fed. Cir. 2003) (At issue was whether a prior art reference enabled one of ordinary skill in the art to produce Elan's claimed transgenic mouse without undue experimentation. Without a disclosure enabling one skilled in the art to produce a transgenic mouse without undue experimentation, the reference would not be applicable as prior art.).

While Viroli discloses the static pre-allocated compilation data structures that are the result of the translator (see Viroli, page 14, Figure 10, “public class Client”), Viroli fails to disclose the implementation of the translator. And, as Viroli only discloses a simple case in discussing the results of the translator, a translator that is capable of translating all parametric polymorphism cases may not be implemented without undue experimentation. To implement Viroli’s translator, one of ordinary skill in the art must first determine all possible translated results and then determine how to implement Viroli's translator to translate from the NextGen language to the translated results.

The Office asserts that “Viroli must show only the ‘internal mechanisms’ and ‘specific internal structures’ that are specifically recited in Applicant’s claims” (see Office Action of 3/5/07, page 3). The Office then asserts that “a typing context” is specifically recited in the Applicant’s claims before admitting “[t]he translation effects the creation and registration of type descriptors (see, for example, page 12, section 4.2, second paragraph), which is to say the ‘computation of typing context data’” (see Office Action of 3/5/07, page 4). Therefore, if as the Office admits, the translation effects the creation and registration of type descriptors, Viroli fails to anticipate the plain language of the claims as Viroli fails to teach how such a translation may be performed.

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In disagreeing with the Applicant's argument that Viroli uses translated objects and not an "exact type" as is recited in the claims, the Office argues that "[t]ranslated' and 'exact' are not mutually exclusive" (see Office Action of 3/5/07, page 4). However, the words of a claim must be given their "plain meaning" unless such meaning is inconsistent with the specification (see MPEP 2111.01 Plain Meaning [R-5] - 2100 Patentability). The word "exact" and the word "translated" are ordinary, simple English words whose meaning is clear and unquestionable. Consider that if Viroli considered the types arrived at via the erasure technique to be "exact", Viroli would describe such types as "exact" and not as a "non-generic version" of the Object type (see Viroli, page 8, first paragraph, lines 4-5).

The Applicant also respectfully disagrees with the Office's interpretation of the functioning of Viroli. The Office asserts that the field "\$t[1]" of Figure 10 of Viroli describes the exact type of the object "c1". The Office further asserts that "\$t[1]" represents the type descriptor for 'Cell<Integer>' (see Office Action of 3/5/07, bottom of page 4 and top of page 5). The Applicant respectfully disagrees with the Office's interpretation of the cited section of Viroli. The Applicant respectfully submits that the field "\$t[1]" refers to a call to the method "createTD()" which is a member of the "Cell" class. For example, see Viroli, page 14, Figure 10, "public class Client", second line of static array where "\$t[1] = Cell.createTD(new \$TD[]{\$t[0]});".

The Applicant further notes that "\$t[0]", which is passed as a parameter to the method "createTD" is equal to "\$t[0]=\$TDManager.register(Integer.class)" (see Viroli, page 14, Figure 10, public class Client, first static array). The Applicant submits that the field "\$t[0]" references a call to the "createTD" method of the Cell class which further calls the \$TDManager.register() method using "Integer.class" as a parameter. The \$TDManager.register() method in turn creates and returns a new instance of the \$TD

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class initialized with, *inter alia*, the "Integer.class" class. Therefore, the Applicant respectfully requests that the Office provide a citation within Viroli where support for the assertion "[t]he field '\$t[1]` describes the exact type of the object 'c1' because '\$t[1]` represents the type descriptor for 'Cell<Integer'>" may be found.

REJECTIONS UNDER 35 U.S.C. § 101

Claims 1–14, 25, and 26 stand rejected under 35 U.S.C. § 101 as directed to non–statutory subject matter. The Office asserts that Claims 1–14 are directed to "a computer program product encoding a computer program" and that the Applicant defines "computer program product" to include a computer data signal embodied in a carrier wave". In making out the rejection, the Office Action relies on the Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility (1300 OG 142), Annex IV, section (c).

The preamble of Claim 1 recites "[a] computer program product encoding a computer program for executing on a computer system" (emphasis added). A computer program for executing does not fall under section (c) the Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility (1300 OG 142), Annex IV because a computer program for executing on a computer system does not rely on the physical characteristics of a form of energy.

The Office further asserts that Claim 1 does not provide a practical application of the encoded computer program because recording the typing context data in the field of the typing context data structure does not amount to a useful, concrete, and tangible result. The Office refers to MPEP § 2106 in asserting that Claim 1 does not recite any

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further use of the recorded typing context data that would permit its usefulness to be realized and that Claim 1 lacks a practical application.

The Office further asserts that dependent Claim 3 appears to recite a useful, concrete, and tangible result as Claim 3 recites that the recorded typing context is used to create an instance of a class. The Applicant respectfully submits that the subject matter of Claim 1 is not required to recite a "use" under 35 U.S.C. § 101; rather, Claim 1 must recite a *useful*, concrete, and tangible result. Something is "useful" if it is "capable of being put to use; especially : serviceable for an end or purpose <useful tools>" (Merriam Webster Online Dictionary). One skilled in the art of computer programming will appreciate the usefulness of having typing context data recorded in the field of a typing context data structure. Typing information plays a key role in execution and/or compilation of computer programs.

Withdrawal of the rejection is respectfully requested.

REJECTIONS UNDER 35 U.S.C. § 102(b)

Claims 1–5, 7–9, 25 and 26 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Viroli et al., *Parametric Polymorphism in Java through the Homogeneous Translation LM: Gathering Type Descriptors at Load-Time*. In order to simplify the issues discussed in the rejection, the Applicant will address the rejections to Independent Claims 1, 25, and 26 together.

Viroli is not an anticipating reference as Viroli fails to provide an enabling disclosure of the desired subject matter. To reiterate from the "Response to Arguments" section, Viroli discloses "[t]he language our translator will accept is the same as that of

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NextGen, it allows type operation over parametric types and type variables” and, “[s]uch a language is a strict superset of *CJ*” (see Viroli, page 6, final paragraph of section 2.3 “NextGen”). The Applicant notes that Viroli fails to disclose any implementation details at all for such a translator. Viroli’s description of the implementation of the translator is insufficient and the translator cannot be produced without undue experimentation. See MPEP 2121.01, “Use of Prior Art in Rejections Where Operability Is in Question [R-3] – 2100 Patentability”:

The disclosure in an assertedly anticipating reference must provide an enabling disclosure of the desired subject matter; mere naming or description of the subject matter is insufficient, if it cannot be produced without undue experimentation. *Elan Pharm., Inc. v. Mayo Found. For Med. Educ. & Research*, 346 F.3d 1051, 1054, 68 USPQ2d 1373, 1376 (Fed. Cir. 2003) (At issue was whether a prior art reference enabled one of ordinary skill in the art to produce Elan's claimed transgenic mouse without undue experimentation. Without a disclosure enabling one skilled in the art to produce a transgenic mouse without undue experimentation, the reference would not be applicable as prior art.).

While Viroli discloses the static pre-allocated compilation data structures that are the result of the translator (see Viroli, page 14, Figure 10, “public class Client”), Viroli fails to disclose the implementation of the translator. And, as Viroli only discloses a simple case in discussing the results of the translator, a translator that is capable of translating all parametric polymorphism cases may not be implemented without undue experimentation. Consider that in order to implement Viroli’s translator, one of skill in the art must first determine all possible translated results and then determine how to implement Viroli's translator to translate from the NextGen language to the translated

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results. Accordingly, Viroli is not applicable as prior art anticipating the subject matter of Claims 1–5, 7–9, 25, and 26.

However, in the interest of expediting prosecution, the rejection will be addressed. The rejection asserts that Viroli discloses “dynamically allocating a field in the typing context data structure” at page 11, section 4.1, third paragraph which shows dynamically allocating a type descriptor that describes an exact type such as ‘Cell<Integer>’. The Applicant has amended Claims 1, 25, and 26 to clarify that the typing context data structure is not statically pre-allocated. As discussed in the “Response To Arguments” section, the cited section of Viroli refers to a statically pre-allocated set of classes and methods. In particular, Viroli discloses that “[t]he language our translator will accept is the same as that of NextGen” at page 6, paragraph 4. More particularly, Viroli discloses at page 6, paragraph 3, “NextGen creates one erased class for each parametric class as GJ does” and “it also creates a light wrapper class and an interface for each instantiation of a parametric class”.

Therefore, assuming but not agreeing with the rejection’s assertion that Viroli discloses “a typing context data structure”, Viroli specifically does not disclose that a typing context data structure is not statically pre-allocated. To the contrary, Viroli explicitly shows that all translated parametric classes are statically pre-allocated. Therefore, Viroli does not anticipate the subject matter of Claims 1, 25, or 26 and Claims 1, 25, and 26 are allowable. Reconsideration and withdrawal of the rejections to Claims 1, 25, and 26 is respectfully requested.

Claims 2–5 and 7–9 depend from Independent Claim 1 and are allowable at least by virtue of such dependency. Accordingly, Claims 2–14 are allowable. Reconsideration and withdrawal of the rejections to Claims 2–14 is respectfully requested.

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REJECTIONS UNDER 35 U.S.C. § 103(a)

Claims 6 and 10–14 are rejected under 35 U.S.C. § 103(a) being unpatentable over Viroli in view of U.S. Patent No. 5,093,914 of Coplien et al. (hereinafter “Coplien”). Claims 6 and 10–14 depend from Claim 1 and are allowable at least by virtue of such dependency. Reconsideration and withdrawal of the rejection to Claims 6 and 10–14 is respectfully requested.

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CONCLUSION

Accordingly, in view of the above amendment and remarks it is submitted that the claims are patentably distinct over the prior art and that all the rejections to the claims have been overcome. Reconsideration and reexamination of the above Application is requested. Based on the foregoing, Applicants respectfully requests that the pending claims be allowed, and that a timely Notice of Allowance be issued in this case. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicant's attorney at the telephone number listed below.

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If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicants hereby request any necessary extension of time. If there is a fee occasioned by this response, including an extension fee that is not covered by an enclosed check please charge any deficiency to Deposit Account No. 50-0463.

Respectfully submitted,
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Date: August 6, 2007

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